

# Exploring the interaction between learners and tools in e-learning environments

Serpil Meri<sup>1</sup>

**Abstract.** The present research explores the interaction between learners and tools in e-learning environments. In order to explore that issue, this study analyzed and interpreted the findings obtained through observation and interview with 10 international students who wished to improve their learning of English by using the English for Academic Purposes (EAP) toolkit equipped and accessed in Blackboard, where learners can easily use it. Along with data from three-time observations and interviews, an in-depth dataset was provided by means of the think-aloud protocol method, which indicated what the students were doing with and thinking of their experiences in the process of learning in the toolkit. The findings showed that there was a substantial indication of the interaction between learners and tools in e-learning environments and the perceptions about their experience in learning in a self-directed e-learning environment, which might help designers to consider some aspects while they are setting up and improving the tools and online learning resources. In addition, the results provide more issues to discuss in terms of the benefit of promoting interaction in self-directed e-learning environments.

**Keywords:** e-learning environments, self-directed e-learning environment, interaction, EAP toolkit.

## 1. Introduction

Learners are supported in different learning environments such as in classrooms, online or blended learning environments. In those environments, they are supposed

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to interact with their fellows, tutors, media or tools; thus, they can be encouraged to improve their learning. However, there has been a growing interest in providing online learning resources and computers or laptops in educational settings (e.g. [Collins & Halversont, 2010](#); [Garrett, 2009](#); [Selwyn, 2003](#); [Yang & Chen, 2007](#)). Therefore, the main interest in research of e-learning environments has been the role of learners in those environments, which is an essential element to be considered by developers ([Jarvis, 2012](#)).

Besides, learners have the flexibility to advance in their learning in e-learning environments ([Lee & Gibson, 2003](#); [Oladoke, 2006](#)). Together with the flexibility, anytime and anywhere access can be offered to learners, which is the substantial advantage of e-learning environments rather than in classroom-based learning environments ([Rhode, 2009](#)).

As illustrated in [Laurillard's \(2012\)](#) conversational framework, learning takes place by means of the interaction between the teacher and learner in blended or classroom-based learning environments. As for learning in self-directed e-learning environments where learners are alone and completely independent ([Ghirardini, 2011](#)) and might feel isolated ([Zembylas, Theorou, & Pavlakis, 2008](#)), the interaction and communication between learners and tools should be taken into consideration in order to overcome the possibility of their loneliness and isolation. That is, in order to reach the high level of learning in those self-directed e-learning environments, the interaction between them and the tools should be provided, which indicates learners' experiences in using online resources ([Hirumi, 2006](#)). In the meantime, designers should be informed about their learning experiences in those environments, as they are the ones to determine and set up the learning design ([Hedberg & Sims, 2001](#)).

Although there have been many studies about the interaction between learners and their fellows or instructors in those environments which show that it has a substantial impact on their learning ([Angeli, Valanides, & Bonk, 2003](#); [Fung, 2004](#); [Johnson, 2006](#); [Topper, 2005](#)), a few of the studies have been conducted to investigate the interaction between learners and tools which enables learners to improve their learning by themselves (i.e. [Jackson, Krajcik, & Soloway, 1998](#)).

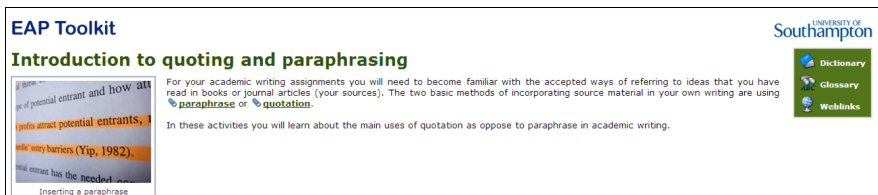
Considering the importance of the study, the present research aims to explore the interaction between learners and tools in e-learning environments by looking at their behaviours, experiences, preferences and learning styles in an e-learning environment.

## 2. Method

### 2.1. Participants and setting

The participants of the present study were 10 international students who were volunteers to take part in the research from February to the end of May in 2013. In order to further their study for the postgraduate study, the participants came to the UK to improve their skills. Therefore, they attended the English for Academic Studies (EAS) course at the University of Southampton. During their study, they had the opportunity to benefit from the EAP toolkit, which provides “a comprehensive set of interactive learning resources for developing the language and study skills of international students and students whose first language is not English” (eLanguages, 2012, para 1). While learning in the toolkit, they obtained the introduction, information/explanation, instruction and feedback from the activity depending on their use of the learning tasks (see Figure 1). Additionally, they could take the advantage of the section of web links, glossary and dictionary if they needed more help.

Figure 1. A sample of introduction and links in the EAP toolkit



Consequently, a self-directed e-learning environment was provided for participants to develop their skills and academic learning.

### 2.2. Data collection and analysis procedure

In order to collect data, a qualitative study was conducted. Observations were made for 15 minutes in the beginning, middle and last weeks of the course via Camtasia<sup>2</sup>, which recorded both the computer screen and the face of the participants who were performing the activities in the EAP toolkit chosen in the first two observation sessions by the researcher but in the last observation session by the participants. In the process, the think-aloud protocol method was applied to see what they were thinking and how they went through the information or

2. <https://www.techsmith.com/camtasia.html>

conducted the activity. Follow-up and semi-structured interviews were also carried out to let them express their perceptions, feelings and preferences about their experience in an e-learning environment. Data from both observations and interviews were analyzed by creating codes in NVivo<sup>3</sup> and then interpreted and discussed as shown in the next section.

### 3. Discussion

The findings from observations and interviews shed light on the interaction between learners and tools in e-learning environments. The conduction of the think-aloud protocol method triggered the use of self-talk of approximately all of the participants. Their use of self-talk showed that scaffolds such as introduction, information/explanation, instruction and feedback provided in the toolkit enabled them to instruct, explain, inform and introduce the topic to themselves and reflect on their learning. Furthermore, self-scaffolding was used “through the dialogic self” (Granott, 2005, p. 148) by most of them as if they addressed other people. By this, they improved their confidence by giving themselves motivational scaffolding after looking at the feedback. Moreover, the use of ‘OK’ as self-talk represented their thought, which showed that ‘I understand’ was not ‘unnecessary verbiage’ in the present study (Eveland & Dunwoody, 2000). Additionally, they developed their learning strategies including cognitive, metacognitive, affective and meta-affective strategies on their own (Chang & Sun, 2009; Luzón, 2006), which was the result of their interaction with scaffolds in the activities.

Together with the use of self-talk, participants had different experiences in benefiting from learning activities in terms of handling their learning in the toolkit. Although they increased their positive feelings about learning through the toolkit over time, nearly half of them required more audio-visual help and activities in the toolkit or tutor’s help because of the lack of support provided in the toolkit. The difference in learning styles can be seen in their preference in following the order of the section in the activities. Most activities were sequential, whereas a few of them were global. As seen, the present research tended to display the interaction between participants and the toolkit via the use of self-talk, the benefit from scaffolders and individual improvement of motivation and learning strategy. However, participants needed more help, despite the improvement in their learning and the increase of their positive perception about their experience in the EAP toolkit.

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3. <http://www.qsrinternational.com/product>

#### 4. Conclusions

This study explored the interaction between learners and tools in an e-learning environment. It concluded that learners tended to have a kind of conversation in a self-directed e-learning environment with the help of scaffolding but without any help from tutors. Although their interaction with online resources was in contrast with the indication of the conversational framework for learning with the interaction or conversation with fellows or tutors (Laurillard, 2012), the current research put forward that the tutor might be replaced in e-learning environments if online learning resources are designed according to users' requirements. Above all, that kind of interaction supported learners to have or improve the ability to manage and handle their learning. Considering the importance of enhancing the interaction between learners and online resources in a self-directed e-learning environment, designers should take into account the provision of necessary assistance in order for users to take control over their learning in an e-learning environment. As the main limitation of the current study is that it does not count on a large dataset, further studies should be designed to include more participants and investigate learners' interaction with well-designed online resources.

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